MAR 25 1939

ENGINEERING CONSTRUCTION WEEKLY

ENGINEERING NEWS-RECORD

MARCH 23, 1939

Tacoma Bridge caisson under block ready for sinking

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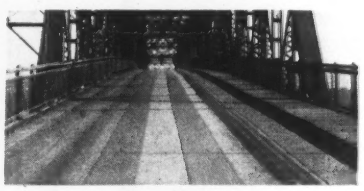

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ENGINEERING NEWS-RECORD

NEWS

Volume 122 MARCH 23, 1939 Number 12

NOTEBOOK NEWS

Quick Surveys of Construction Events

▶What is the matter with the WPA? Last May, Colonel Brehon Somervell, WPA Administrator of New York City, appointed an advisory council of business men to recommend ways to improve the work relief program. Taking their assignment seriously they come back with a set of sensible suggestions that are of nation-wide interest. p. 7.

▶Sandblasting of construction joints in dams is being tried by the Bureau of Reclamation as a substitute for the more usual method of cleaning them with air-water jets.

▶Economic questions topped technical problems as subjects of discussion at the A. R. E. A. meeting in Chicago last week. Highway haulage competition received particular attention. Also the difficulties of maintaining necessary research programs in the face of the railroads' financial troubles.

▶Outcome of the controversy over the operation of Buchanan Dam during the floods on the Colorado River of Texas is a promise by the Lower Colorado River Authority to maintain as much flood storage as possible, to seek funds to raise Marshall Ford Dam 50 per cent in height and to set up a force to cooperate with Weather Bureau river stage forecasters.

▶New Jersey is actively studying a plan to secure a new water supply for its metropolitan area from the Delaware River. In a report to Governor Moore it is recommended that a 49-mile concrete aqueduct be constructed in the abandoned Delaware and Raritan Canal to divert 200 m.g.d. Details of the project will be given in the March 30 issue.

HUTCHINS TO HEAD ARIZONA HIGHWAYS

A CAREER MAN has received recognition in the elevation of W. R. Hutchins, district engineer in the Arizona highway department, to the post of state highway engineer. Hutchins has been connected with the highway department since 1923.

Softening Approved On Colorado Aqueduct

Construction of the long-discussed softening plant for water from the Colorado River aqueduct was approved Mar. 17 by directors of the Metropolitan Water District of Southern California. Contract for flocculators and sludge removal equipment was let to the Dorr Co., Inc., New York City.

The plant, which will be built at Sandimas, will have a capacity of 100 m.g.d. with provision for future expansion to a capacity of 400 m.g.d. The plant will provide for lime removal followed by lime zeolite treatment of part of the flow to yield a hardness of 125 p.p.m. Sludge will be regenerated by burning. Hoover and Montgomery are consultants on the project.

LCRA Announces Flood Policy

Texas agency will raise Marshall Ford Dam and use storage only for flood control

Responding to efforts of the Texas legislature to pass a law requiring that the Lower Colorado River Authority keep the reservoir behind its Buchanan Dam half empty at all times in order to be prepared for floods (*ENR*, Mar. 2, 1932, p. 69), the authority last week announced that it intended to complete the high dam at Marshall Ford immediately and to dedicate the additional storage gained exclusively to flood control.

The plans for Marshall Ford Dam originally called for a 162-ft. high structure to cost about $12,000,000, so designed that the height could later be increased by 78 ft. The low dam is now

(*Continued on p. 10*)

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Earth Dam Fails In Montana

An earth dam on Dry Creek near Jordan, Montana, failed Mar. 13 when a sandstone formation under the dam soaked up water and allowed a 70-ft. section of the structure to be carried away. Spring runoff had backed up a lake for more than two miles behind the dam, which was 3,665 ft. long and reportedly about 15 ft. high. The rush of water below the dam inundated part of the town of Jordan, but no one was injured since warning had been given by stream conservation forces and the CCC.

The dam was built last year at a cost of $150,000, as a flood control and conservation project, by the State Water Conservation Board, using force account and WPA labor. A similar failure before the dam was completed caused a small flood a year ago.

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Meeting of Railway Engineers Centers on Economic Questions

Technical matters eclipsed by discussion of economic questions at meeting of American Railway Engineering Association

Economic questions such as the effect of highway competition on the railroads largely superceded engineering subjects in interest at the 40th annual meeting of the American Railway Engineering Association held in Chicago, March 14-16. Despite this concentration on subjects generally considered to be outside the field of the A.R.E.A., the meeting was not without value from a technical angle, especially with respect to newer problems of the maintenance men such as high-speed operation.

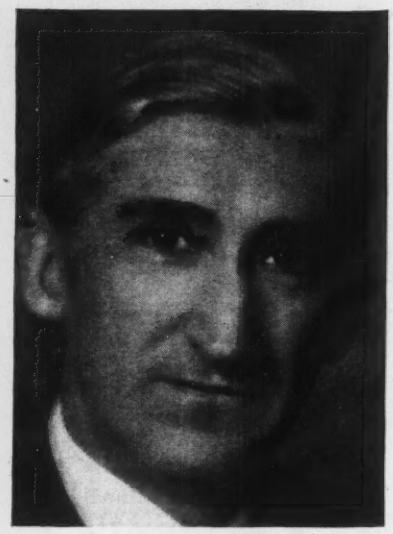
Highway competition

C. E. Johnston, chairman, Western Association of Railway Executives, speaking at the association luncheon meeting, declared that the present federal policy of subsidizing waterway and highway traffic is leading to the destruction of the railroads as private enterprises and called for a study of all types of commercial traffic to determine how each class can be most economically handled when all costs are placed on a comparable basis—a study which could be used as the basis for outlining a national transportation policy. Studies such as that of the Illinois highway department were cited as showing that commercial trucks are not bearing their fair share of highway costs, and hence are able to set rates that the railroads cannot meet. With proper allocation of highway costs and equitable taxation, Johnston holds that from one-fourth to one-half of the present truck-handled freight would return to the rails. As most of such freight pays high rates, its return would put the railroads back on their feet financially.

Like sentiments were expressed by C. E. Smith, vice-president of the New Haven, at the conclusion of his illustrated talk on flood damage to New England railroads. Smith set the total damage due to the September hurricane at $6½ million, and stated that the railroad had met this without having to ask the federal government for help.

Association activities

Association activities were reviewed by F. E. Morrow, president, in opening the sessions. Financial conditions necessitated a ten per cent cut in the work of the association Morrow said, but the cut had been made without curtailment of urgent work. Subsequently J. W. King, vice-president, American Association of Railroads, stated that the association had appropriated $80,000 for the work of the A.R.E.A. This will permit continuation of the current rail and track-stress



E. M. HASTINGS
new president

studies, but will not permit the inauguration of other studies on the A.R.E.A. program such as that on bridge impact. King urged that the results of A.R.E.A. studies be made available quickly to those who can use them in cutting operating costs.

Thomas H. MacDonald, chief, U. S. Bureau of Public Roads, who was scheduled to speak on grade-crossing elimination, was unable to attend on account of illness but telegraphed that the bureau expected to submit to the railroads this year its classification of grade crossings, a classification that has been prepared in order to be sure that the crossings most needing elimination receive first attention.

Waterways

A concise review of the development and use of inland waterways was presented by the committee on the economics of railway location and operation. This is one of a series of reports which the association has asked the committee to prepare to give railroad men facts which can be used to show the true cost of waterway transportation as compared with rail transportation. In discussion of this subject, W. D. Faucette reported that the A.A.R. will present to Congress in the near future a report on the economic effect of the proposed Florida ship canal.

High-speed operation

The effect of high-speed trains on the work of maintenance engineers was one of the subjects of active interest throughout the convention. Formulas and tables for spirals for curves under high-speed operation were included in the committee reports, and at the Western Railway Club dinner Wednesday evening, H. R. Clarke of the Burlington and K. Cartwright of the New Haven spoke on the relation of locomotive design to rail maintenance. The committee on complete roadway and track structures presented a proposed classification of railways in which high-speed operation is included as one of the factors to be taken into consideration in determining the character of construction required. The recommended classification is in effect an index of the association's major recommended practices for the design and construction of railroad track.

Rail research

Very encouraging results from the heat-treatment of rails were reported again this year, the total tonnage of such rail now in the track having reached 1,230,000 tons of controlled-cooled rail and 60,000 tons of Brunorized rail. Reports of the rail-fissure test cars show a marked improvement in the condition of rail in the track. In the study of end hardening of rails to reduce batter, it was reported that the association will start this year a field test of four types of mill methods of end hardening and four of field methods, each test section to have 100 joints of each type of hardening.

Prof. H. F. Moore reported on the continuation of the rail investigations conducted at the University of Illinois under the joint auspices of the A.A.R., A.R.E.A., and the rail manufacturers. In this year's study of transverse fissures it has been found that the shatter cracks from which fissures develop can be produced by bubbling hydrogen through a molten ingot. This artificial means of producing cracks has greatly simplified the work of getting rail for use in studies of methods for elimination of cracks. Holding rails at high temperatures after rolling and then permitting them to cool in air has been found to eliminate cracks, but the research staff is not yet ready to make any recommendations concerning this method as compared with present methods of controlled cooling.

Other rail studies in progress are on welded rail and on a non-destructive test for rails for use in mill inspection.

Prof. Arthur N. Talbot reported on the joint studies of stresses in railroad track. These are now centered on long welded rails in tracks and on field and laboratory tests of joint bars.

On the subject of rails longer than 39 ft., the rail committee reported on the economics of rails 45 and 78 ft. long. Considerable savings were shown for the longer rails.

New instructions for mill inspection of structural steel, for inspection of fabrication of steel bridges and for the inspection of bridge erection were adopted for the A.R.E.A. Manual.

The masonry committee made extensive revisions in the A.R.E.A. specifications for portland cement to bring them into line with current A.S.T.M. standards and also submitted as information new specifications for pile foundations. Supplementing this, the committee on wood bridges and trestles submitted recommendations on the proper relationship between the energy of pile hammers and the mass of concrete piles, also specifications for driving wood piles.

E. M. Hastings, chief engineer of the Richmond, Fredericksburg & Potomac R.R., was elected president of the association; F.L.C. Bond, Canadian National Rys., was elected vice-president, and Robert Faries, G. R. Smiley and J. B. Akers were elected directors.

The new president began his railroad career with the Baltimore & Ohio in 1899 working on surveys of the abandoned South Penn R.R. which is now being made into a toll road. In 1903 Hastings went to the Richmond, Fredericksburg & Potomac, becoming a resident engineer in 1906. In 1920 he was made principal assistant engineer and in 1922, chief engineer.

The Railway Show of the National Railways Appliances Association was held at the International Amphitheatre, Chicago, concurrently with the meeting of the A.R.E.A. About 75 firms exhibited a wide variety of railroad maintenance tools and equipment and materials used in railway construction.

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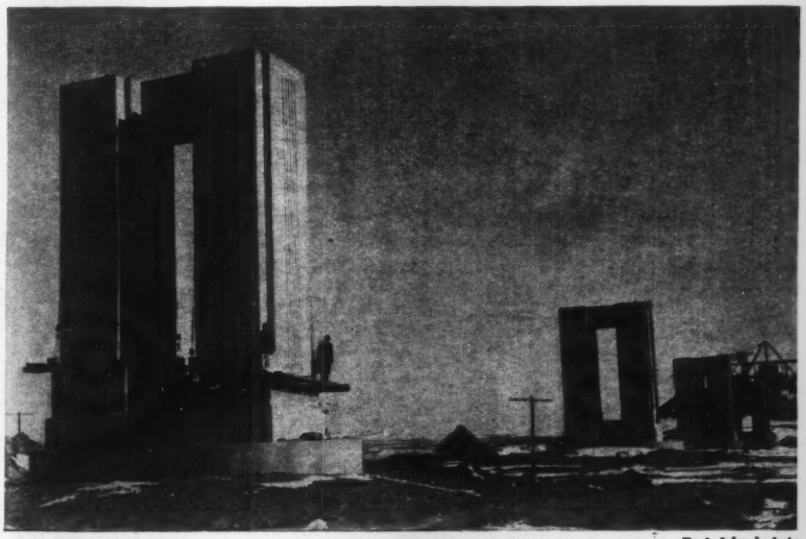
Second State Ratifies Ohio Compact

West Virginia last week became the second state to ratify the Ohio Valley stream pollution compact. Indiana ratified the compact two weeks earlier (*ENR*, Mar. 9, 1939, p. 8).

The compact, which now awaits ratification by Ohio, Kentucky, Tennessee, New York, Virginia, and Illinois, obligates the participating states to treat sewage flowing into the Ohio system.



Rock Island photo

HANDSOME PIERS FOR RAILWAY BRIDGE

RISING 92 ft. above the river, these piers will provide a new bridge for the Rock Island R. R. across the Cimarron River near Liberal, Kan., on the main route to Arizona and California. Erection of five truss spans, each 250 ft. long, is beginning immediately, and it is planned to have the new bridge in service by June 1.

The piers rest on caisson-sunk foundations going 65 ft. below the river bed and contain, with the abutments, 21,800 tons of concrete. Grading, which started last October, has required excavation of 3,200,000 cu.yd. of earth to build the east and west triple-terrace approaches. The steel superstructure will weigh 2,600 tons, and the entire improvement will cost about $1,500,000.

In addition to building the new bridge, the Rock Island is constructing about eight miles of approach lines which will save four miles, 106 ft. of rise and fall, and 353 degrees of curvature.

WASHINGTON HIGHLIGHTS

Special reports by Paul Wooton

HOUSING UNIT COSTS in USHA projects would have been restricted to $3,500 per dwelling under an amendment to the Housing Authority Act which was voted down by the House Mar. 20.

AUTHORIZED bonded indebtedness of the Tennessee Valley Authority would be increased from its present limit of $50,000,000 to a maximum of $100,000,000 under the terms of a bill favorably reported Mar. 20 by the Senate Agriculture committee. Introduced by Senator Norris, the bill is intended to permit financing TVA's $43,000,000 share in the purchase of the Tennessee Electric Power Co.

A LOCK, dam, and power plant at Enfield Rapids in the Connecticut River, recommended by the Secretary of War, was opposed last week before the House rivers and harbors committee by S. H. Wadhams, representing Governor Baldwin of Connecticut. Wadhams said that "We have sufficient power already."

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ANOTHER element in the national defense program started on its way through Congress March 10 with the reporting by the House committee on naval affairs of a bill authorizing 44 projects in the public works program of the Navy at a total cost of $38,524,000. Items in the bill include:

Drydocks	$16,945,000
Fleet maintenance facilities	1,312,000
Aeronautical requirements	1,241,000
Ordnance depots	2,328,500
Supply facilities	2,320,000
Hospital facilities	1,483,000
Radio stations	286,500
Training, education, welfare, housing	12,608,500

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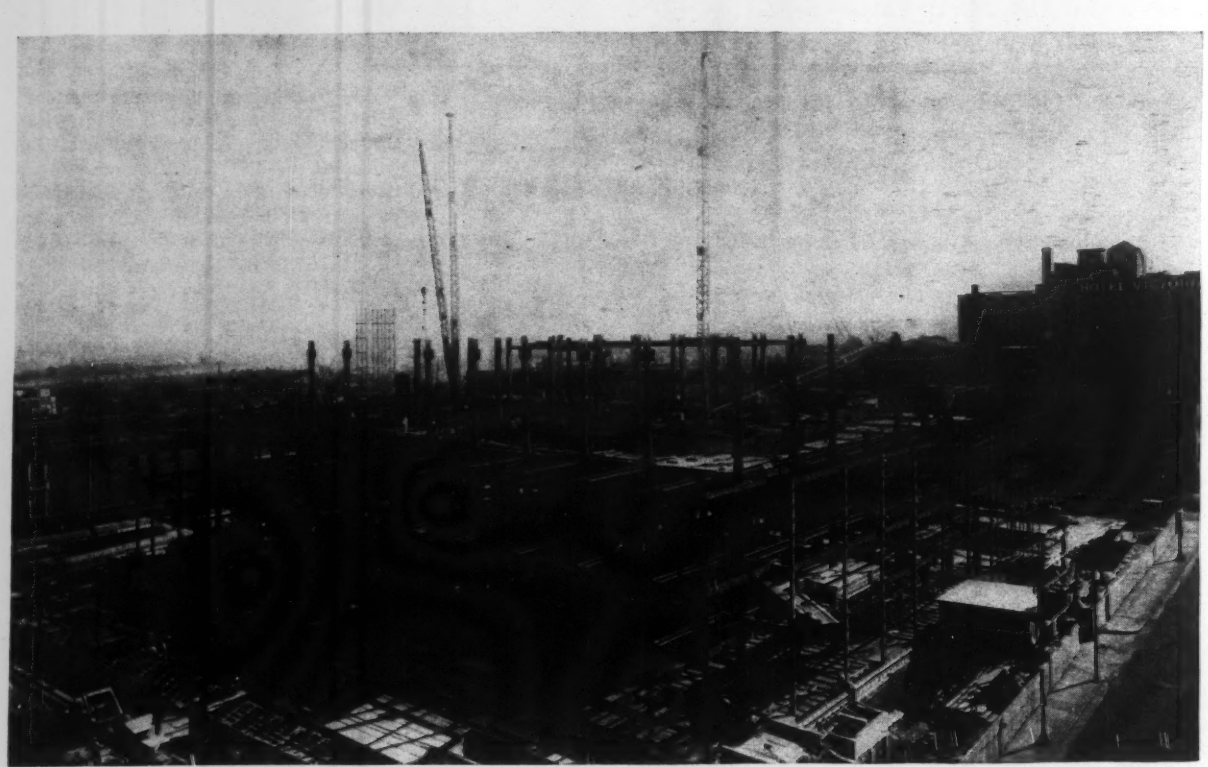
Larger Reservoir Urged In Jersey Water Plan

Expansion of Governor Moore's plans to provide additional water supply for northern New Jersey was urged at a meeting of Pennsylvania and New Jersey water control officials Mar. 18. The governor's plan calls for diversion of 200 m.g.d. from the Delaware River, via the old Delaware and Raritan Canal, to a reservoir in the Raritan River near Bound Brook, N. J. The original plan would provide only four or five days storage in the reservoir, but it is now proposed to make the reservoir large enough to hold 50 to 100 days supply. This would add $4,000,000 to the estimated $28,000,000 cost.

Six Months from Foundation to

AFTER HAVING TO WAIT an extra seven weeks for demolition of the old Central Post Office and Federal Courts Building in Kansas City, Mo., the Swenson construction Company lost no time in preparing the basement and foundations for the new federal building which was to replace it. Taken in the middle of last summer, this picture shows excavation, footings and retaining wall work. On Sept. 1 of this year the government expects to occupy the structure.



ERECTION of some 3,000 tons of structural steel for the Kansas City federal building was well under way when this shot was made. The building, which occupies an area 175 by 235 ft., has a finished height of ten stories.

Roof

onstruction on ansas City's federal ilding was begun t August and the of was completed in bruary

THE DATELINE on the above photo reads "12-21-38". The roof had not been completed then, but passers-by certainly were able to picture the finished U. S. Post Office and Court House. Exterior is of Bedford stone, with aluminum panels above and below windows on several stories.

COMPLETION for occupancy by the first of September is the aim of the builders of the new federal building in Kansas City, Mo.

Following a seven weeks' delay during demolition of the old central Post Office and Federal Court Building, ground was broken for this structure last summer. The roof was completed in 6½ months.

In one month after the wreckers turned the project over to the contractors, the basement had been excavated from 3 to 5 ft. through solid rock, shallow concrete bases dug and poured, foundation forms assembled and poured and 50 per cent of the first tier of structural steel erected. As outside structural columns rest on the foundations at first floor level, instead of on base rock as the others do, it was necessary to pour the outside retaining wall before structural work could proceed.

The 10-story 175 ft. x 235 ft. building has a Bedford stone exterior with architectural aluminum panels above and below all windows. Three thousand tons of steel were used in the structural work.

Floors, designed to accommodate a load of 100 lb. per sq. ft., are made up of 3½ in. of finished concrete on top of structural slab. The court rooms are treated with a cork composition for sound absorption.

W. A. Row, who is general superintendent for the Swenson Construction Co., Kansas City general contractors, says he sees no obstacles to prevent occupancy Sept. 1. Subcontractors include the Cleveland Wrecking Co., Cincinnati, demolition of old Federal Building; George J. Shaw, Kansas City, excavation; Kansas City Steel Co., furnishing and erecting steel.

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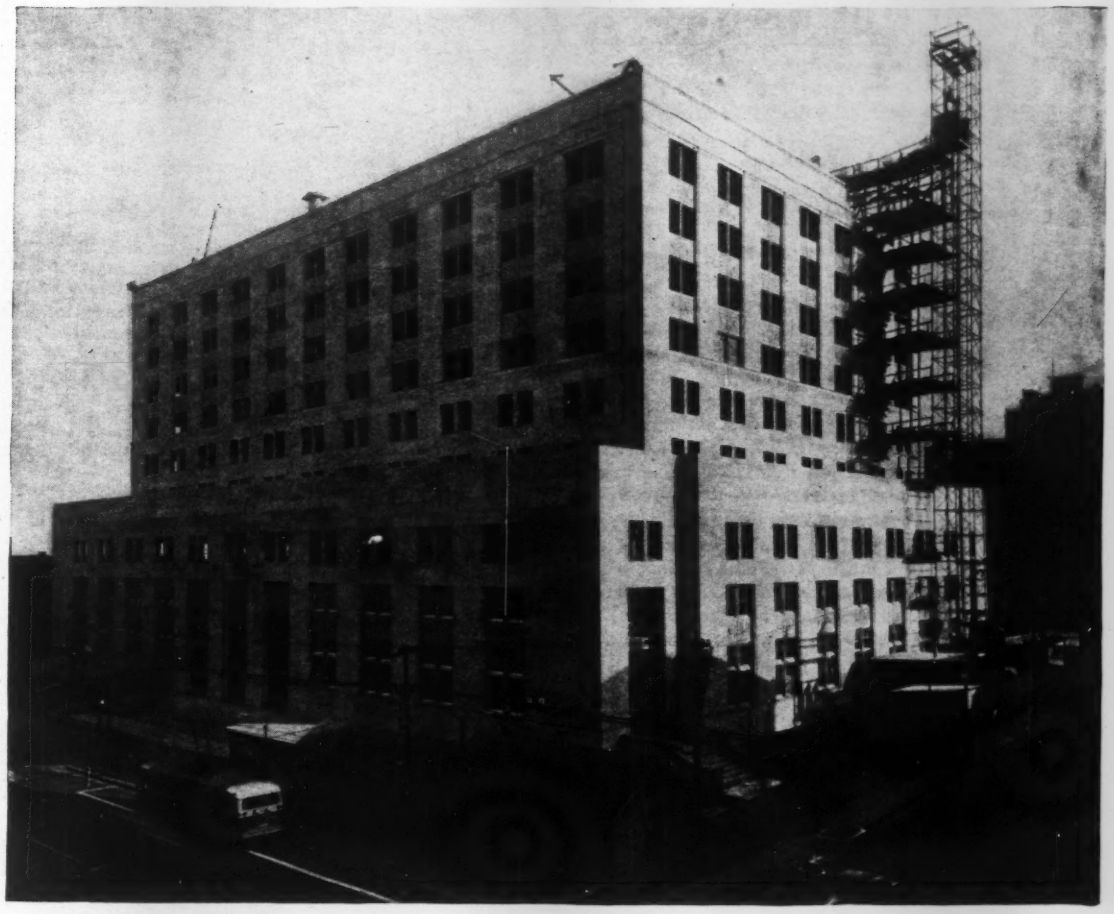

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BRIEF NEWS

A NET PROFIT of $20,700 was obtained by the city of Youngstown, Ohio, from operation since last October of 538 parking meters.

PRELIMINARY work has been started by the Mexican Ministry of Communications and Public Works on construction of a dam at Guadalupe, Mexico State, 2,000 ft. long and 100 ft. high which will provide water supply and irrigation for the valley of Mexico.

THE WATER SUPPLY system of the former town of Cardin, Okla., has been purchased by C. M. Masters from the Cardin Community Trust. Town residents voted last August to dissolve the town organization to escape heavy tax burdens arising from public works in the boom days of the mining fields, and the community trust was organized to dispose of the town's property.

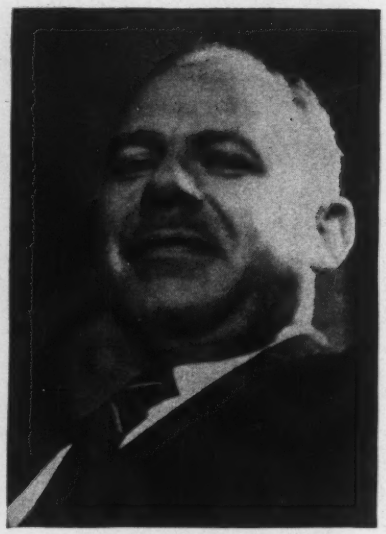
THE RAINFALL record for Hilo, Hawaii, was broken early this month by a rainstorm in which 19.20 in. fell during the 24-hour period from 7 a.m. Mar. 2 to 7 a.m. Mar. 3. The previous record was 14.32 inches. During 10 hours of the storm, 11.12 in. fell.

AFTER SPENDING about $100,000 of city and federal money creating a park on a 5-acre river site, the city of Prairie du Chien, Wis., discovered that the property belonged to the Milwaukee R. R. and that the property intended for the park is located elsewhere. The city is now trying to negotiate a long term lease on the railroad's land.

INSTALLATION of parking meters by Arkansas cities and towns must be approved at an election under the terms of an act just signed by Governor Bailey.

A GAGE LABORATORY is to be established at Carnegie Institute of Technology this spring by the Ordnance Department of the U. S. Army. Intended to make standard measurements available for machines producing army equipment, the precision instruments in the laboratory will also be open to use by Carnegie Tech and industries in the Pittsburgh area.

A MANAGERS division has been organized in the National Association of Housing Officials for the benefit of men administering large scale housing projects. Raymond A. Voigt, manager of the Parklawn project in Milwaukee, is president of the division.



GORDON M. FAIR

Elected president of the Boston Society of Civil Engineers Mar. 15 was Gordon M. Fair, professor of sanitary engineering at the Harvard School of Engineering. Fair has taught at Harvard since 1918.

MEETINGS

REGIONAL AND LOCAL

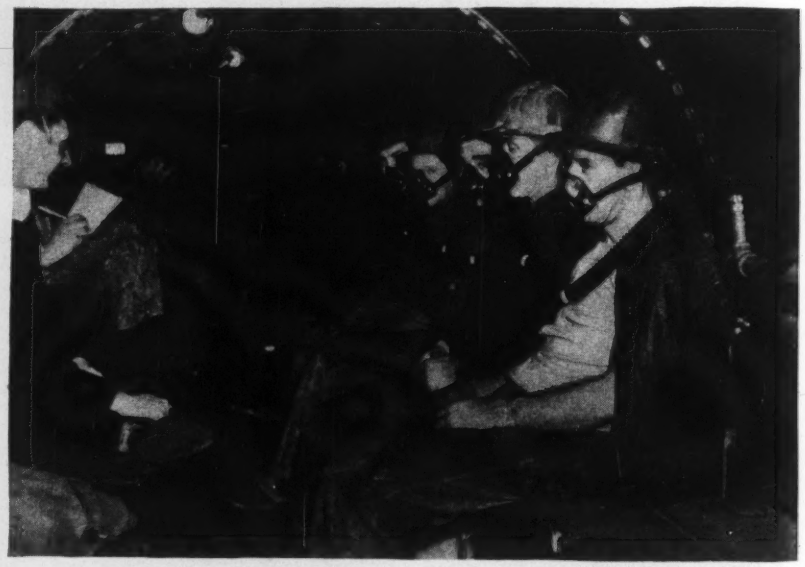
AMERICAN WATER WORKS ASSOCIATION, section meetings: New York, Sagamore Hotel, Rochester, Mar. 30-31; Kentucky - Tennessee, Peabody Hotel, Memphis, Apr. 10-12; Canadian section, Royal York Hotel, Toronto, Apr. 12–14; Montana, Park Hotel, Great Falls, Apr. 14-15; Florida, Alcazar Hotel, Miami, May 4-6.

ARKANSAS WATER AND SEWAGE CONFERENCE, Fayetteville, Apr. 10–12.

CALIFORNIA SEWAGE WORKS ASSOCIATION, annual spring conference, Visalia, Calif., Apr. 14–15.

PACIFIC NORTHWEST REGIONAL PLANNING COMMISSION, annual conference, Olympic Hotel, Seattle, Apr. 27-29.

AMERICAN SOCIETY OF CIVIL ENGINEERS, Texas section, semi-annual meeting, Plaza Hotel, Corpus Christi, Apr. 28-29.



New York Tunnel Authority photo

OXYGEN FOR SANDHOGS AIDS DECOMPRESSION

EXPERIMENTS carried on over several months by the New York City Tunnel Authority have led to the development of an improved apparatus for providing oxygen to compressed air workers during decompression which permits 36 or more simultaneous decompressions. The studies were made in cooperation with the U. S. Public Health Service and the U.S. Bureau of Mines and the compressed air workers union.

The apparatus has been of such aid in the prevention of compressed air illness among sand hogs that the Walsh Construction Co., contractor for the authority on the Queens Midtown Tunnel, announced Mar. 17 that it would install equipment and at its own expense continue studies on a larger scale.

The method developed is to provide special masks to workers, at the end of each shift, connected to tubes through which the men receive pure oxygen to breathe instead of air. In this way, it was found, nitrogen taken into the body during work under high pressure was relieved more rapidly without the formation of the nitrogen bubbles which cause the bends.

Changes Urged In WPA Policy

Advisory Council recommends continuation of work relief but at less than prevailing wages

Continuation of a federal-administered work relief program fluctuating in magnitude with an unemployment index is recommended in a report made last week by an advisory council of New York business men to New York City WPA administrator Somervell and transmitted by him to WPA administrator Harrington. Appointed last May by Administrator Somervell to advise him on New York City work relief problems, the council found it necessary to broaden its studies to a consideration of the entire subject of work relief nationally. The council, of which Oswald W. Knauth is chairman, was aided in its studies by a research staff headed by John D. Lescohier, professor of economics at the University of Wisconsin.

While pointing out that the government's policy should be directed primarily to the promotion of prosperity and only secondarily to public assistance, the council "agrees in principle that a work program limited to useful projects with a minimum of competition and dislocation of private enterprise offers the preferable form of assistance for employable workers."

It is recommended that relief workers work full time and receive the security wage now paid by WPA, resulting in a lower hourly rate than the prevailing wage. Since competition with normal private production is to be avoided, the council believes that it is impracticable to create projects to fit the previous training of all who are unemployed. Because of inherent complications, work relief should not be provided through private contractors.

Subsidies granted by the federal government for public works and work relief, it is said, should be based on quotas established for various localities in accordance with the state of unemployment as reflected in the local unemployment index. Federal assistance should be initiated when the unemployment index of the whole country rises above a predetermined emergency level and should cease when the index falls below that point.

Creation is recommended of a nonpartisan statutory federal council on public assistance which would review federal policies and make recommendations on both the direct relief and work relief programs to the administration and to Congress. Similar councils should be set up in each state.

The council points out that advantages are to be found both in local and in national administration of a work relief program. It believes, however, that if funds are allocated on the basis of an unemployment index as it recommends, "federal administration of work relief of a type similar to the Works Progress Administration . . . should secure the benefits of federal control without the possibility of political disadvantages. Work relief should continue under federal control and operation for the present, with the local government retaining the power to select the projects to be operated. . . ."

"The administration of work relief should be simplified," the council states, "and the management improved by the adoption of a policy for comprehensive planning of work for a reasonable period in advance; the allotment of funds accordingly; the elimination of the arbitrary distinction between administrative and other employees and the 5 per cent limitation applying to the former; . . . the establishment of a merit system based on adequate examination for employees and executives in administrative positions and the payment of salaries somewhat commensurate with responsibilities; the establishment and maintenance of operating and engineering standards; the installation of simple cost-keeping on certain types of work."

The council recommends that the present means test as a condition of eligibility for work relief be liberalized so as not to require complete exhaustion of family assets, applicants being permitted to retain ownership of homes, minimum life insurance and small savings.

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Shipping Restricted On C. & D. Canal

In an effort to prevent a recurrence of the accident of last January when a freighter moving through the Chesapeake and Delaware canal collided with and destroyed a lift bridge across the canal at St. Georges, Del. (*ENR*, Jan. 12, 1939, p. 1; Jan. 19, p. 35), the U. S. District Engineer has ordered that all vessels more than 380 ft. long must have the assistance of a tug when moving through the canal. Previously only vessels longer than 435 ft. were required to be accompanied by a tug.

Testimony at hearings on the accident, it is reported, indicated that large vessels have frequently had difficulty in maneuvering promptly at low speed in the canal.

All the wreckage of the bridge has now been removed from the canal.

LABOR NOTES

CONSTRUCTION work at Denver is rapidly being halted by a strike of brick makers in northern Colorado who are demanding a wage increase from 46 to 62½ cents an hour.

HODCARRIERS working on a section of the Pennsylvania Turnpike went on strike Mar. 13 demanding a closed shop contract with the Connell and Laub Construction Co., contractor on a 6.7 mi. section of the Pittsburgh-Harrisburg toll road. The contractor now operates open shop.

A SPECIAL lower wage rate for building craftsmen employed on construction of one- and two-family houses and on alteration work was approved in principle Mar. 16 by the Essex County, N. J., Building Trades and Construction Council. The council decided to take definite action at a later meeting. Success of a similar plan in the New York area in providing additional work for union men was instrumental in the decision.

PLUMBING work on a number of large construction projects in New York City has been halted by a strike of the 2,500 members of Local 463, Journeymen Plumbers and Steamfitters, AFL. The strike was called in resistance to a demand by the employers association that the present $2 an hour six-hour day agreement be extended to provide a 7-hour day at $1.80 per hour.

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Connecticut Modifies Land Buying Method

Private real estate agents will no longer be used by the Connecticut state highway department in purchasing land for highways, Highway Commissioner W. J. Cox announced Mar. 13. In future, the commissioner said, all land acquisitions amounting to more than $1,000 will be negotiated by the right-of-way bureau of the highway department and submitted to a judge of the Superior Court for approval. The new policy follows the recommendation of Governor Baldwin.

Irregularities in connection with the purchase of land for the Merritt Parkway last year led to the resignation of Highway Commissioner MacDonald and conviction of several real estate agents employed by the department.

The land buying policy in the future, Cox said, will be to have an appraisal of the land made by the right-of-way bureau and, if this is not accepted by the owner, to institute condemnation.

Galveston's new causeway, which was designed by Terrell Bartlett, San Antonio (*ENR* Sept. 15, 1938) is here receiving the critical appraisal of **E. N. Noyes,** Dallas consulting engineer. A Gulf Coast job on which Noyes has been consultant is the Corpus Christi $850,000 waterfront improvement, which will safeguard the low-lying part of that city from Gulf storms as well as provide a much-needed shoreline boulevard.

Inspecting concrete samples and directing a staff of 103 are both part of the day's work for **T. E. Stanton,** materials and research engineer of the California Division of Highways. Under his direction analyses and tests are made on all kinds of materials from steel to road oil used on 14,000 mi. of state highways. Here he is inspecting concrete samples in a tray of alkali water on the roof of the Sacramento laboratory.

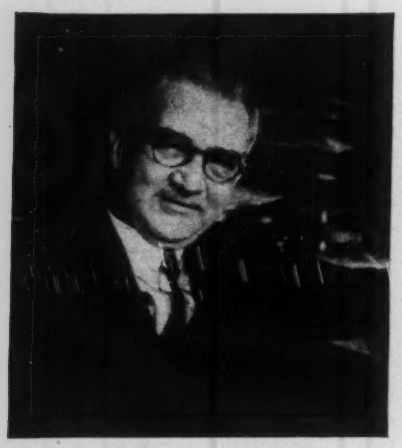
A. E. Hullin, superintendent on the North Fork Debris Dam, in California, for A. Teichert and Sons, Inc., contractors, is just completing an arched concrete dam that is to store mining debris instead of water. This is the first of a series of four such dams to be built in California under direction of the U. S. Engineer Department. The North Fork Dam is 155 ft. high, and it will store about 28,000,000 yards of material.

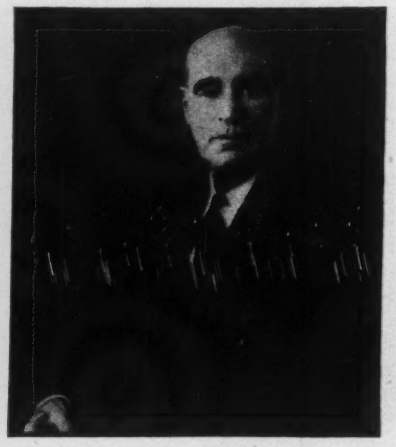
MEN AT WORK

This month **W. E. Sheddan,** city engineer of Jacksonville, Fla., celebrates three score years of service with the city. What the town fathers think of his work is indicated in the administrative post he now occupies. And furthermore—he and his staff of 70 engineers occupy what is perhaps the only building in the country bearing the title, "City Engineers Building"—a three story edifice quite a distance from the City Hall.

Ten terms as New York State Superintendent of Public Works will be the record of **Frederick Stuart Greene** when he completes his present tenure. Colonel Greene was recently reappointed to his position by Governor Herbert H. Lehman. He was first appointed in 1919 and has served continuously except for the two year period 1921 and 1922. A constitutional amendment, recently passed, extends the term of this office from two to four years.

Des Moines' city engineer, **J. M. Tippee,** explains to **Prof. Quincy C. Ayres,** Iowa State College, the function of an annular areaway surrounding the trickling filters in Iowa's capital city. The galleries aid inspection and make it possible to flood the filters to control psychoda flies. Tippee and his engineering staff designed the plant so that it could be built by WPA workers. Professor Ayres is in charge of patents for the state school.





OBITUARY

JAMES D. ROSS, administrator of the Bonneville power project and for many years city light superintendent of Seattle, died Mar. 14 in Rochester, Minn. at the age of 66. Commenting on his death, President Roosevelt referred to Ross as "one of the greatest Americans of this generation" and Secretary Ickes spoke of him as a "man of courage and vision who was a pioneer in his field."

Ross' first engineering experience came in 1903 when he designed and built Seattle's first light and power plant, on the Cedar River. In 1905 he was employed by the city as an electrical engineer in connection with operation of the plant and six years later was appointed superintendent of the city lighting department. Except for a few months in 1931, when he was dismissed for political reasons, Ross held this position until the time of his death, although he was on leave of absence after 1935. In the latter year he was made chief engineer of the power division of PWA, and a year later he was named a member of the Securities and Exchange Commission. He became Bonneville administrator in October, 1937. It was under Ross' supervision that Seattle developed the Skagit River power system, comprising the Gorge, Diablo and Ruby plants.

DAVID T. BROWN, senior engineer for the U. S. Bureau of Public Roads, in charge of Inter-American Highway construction in Central and South America, died in Honduras Mar. 10 at the age of 54. A graduate of Virginia Polytechnic Institute in 1905, Brown worked for several years with the Virginia state highway commission and later as a highway engineer for the North Carolina Geological and Economic Survey. After two years of war service in the Corps of Engineers, Tucker spent several years with the DuPont Engineering Co. on construction work for General Motors. He joined the Bureau of Public Roads in 1924, serving as associate highway engineer and since 1930 as senior highway engineer.

ROBERT J. ROWE, county surveyor of LaSalle County, Ill., died Mar. 12 at Sheridan, Ill., aged 67.

PAUL J. BOUGHAN, 39, a civil engineer in the Metro-Goldwyn-Mayer studios, died Mar. 9 in Los Angeles. Boughan was a graduate of Finley Engineering School and the University of Southern California and had served with the U. S. Engineers in the war.

WILLIAM E. LAMOREAUX, 31, an engineer on WPA projects at Omaha, died there Mar. 15. He was a graduate of the University of Nebraska.

JULIAN A. GREGORY, a lawyer, former chairman of the Port of New York Authority, died Mar. 17 in New York City at the age of 64. He was chairman of the authority from 1924 to 1926 during the time when plans were drawn up for the George Washington Bridge.

CAPT. O. F. BRINTON, 55, in charge of operations for the U. S. Engineers at Snake Butte Quarry near Fort Peck, died at Denison, Tex. Mar. 15. Brinton was a graduate of the Montana School of Mines.

NORMAN E. GREENE, Seattle civil engineer, died there Mar. 14, aged 49.

JOHN A. HANLEY, 83, keeper of the Kilbourn Park Reservoir at Milwaukee and oldest employee of the city, died there Mar. 11. Hanley had been an employee of the city water department for 55 years, and had held his Kilbourn Park position since 1892. His father had been keeper of the same reservoir for 30 years before him.

MALCOLM K. MCQUARRIE, chief engineer of the Dominion Atlantic Ry., died in Montreal Mar. 15, aged 54.

MEN AND JOBS

WALTER J. SCOTT, resident engineer for the WPA at Bridgeport, Conn., has been appointed safety consulting engineer at the state WPA office in New Haven.

RAYMOND ARCHIBALD, who has been with the U. S. Bureau of Public Roads for the past three years as construction and bridge engineer at San Jose, Costa Rica, on Inter-American Highway work, has joined the staff of the J. E. Greiner Co., Baltimore consulting engineers, as resident engineer on construction of a bridge over the Potomac near Newburg, Md.

WILLIAM HERZBERG, formerly construction engineer in the Birmingham district for the Alabama highway department, has been appointed construction engineer for the department.

W. G. PRUETT has been appointed office engineer for the Alabama highway department; he was formerly assistant engineer.

MARVIN TAYLOR, newly appointed maintenance engineer for the Alabama highway department, was formerly division maintenance engineer.

S. W. HARBIN is the new engineer of surveys and plans in the Alabama highway department. He was formerly chief draftsman in the general office.

L. R. RUSSELL has resigned his post as assistant engineer in the Ashland division of the Ohio highway department. Russell plans to practice architecture and engineering in Ashland.

H. M. MILLER has been appointed earth fill compaction inspector for the Atchison, Topeka & Santa Fe Ry. Miller spent the last two years with the U. S. Bureau of Reclamation as inspector on construction of Caballo Dam. Earlier he worked for the New Mexico state highway department, and from 1926 to 1932 he was on survey work with the A.T.&S.F.

R. F. POSTON, first assistant engineer since 1935 with the division of sanitary engineering of the South Dakota state board of health, has resigned to join the staff of the U. S. Public Health Service.

N. A. STAPLES has been appointed district engineer in District No. 6 of the Pennsylvania highway department, with headquarters at Philadelphia.

S. W. JACKSON is the new state highway district engineer at Franklin, Pa.

HARVEY F. BROWN has been appointed resident engineer for the Ohio state highway department in charge of Holmes, Tuscarawas, Carroll, and Harrison counties with headquarters in Philadelphia.

GROVER C. KINLEY is the new resident engineer for the Ohio state highway department for Lawrence and Jackson counties.

B. R. KENNEY, for nineteen years resident district engineer for the Ohio highway department in Geauga County, has been dismissed.

WILLIAM WHITEHEAD has resigned his post as resident highway engineer at Ironton, Ohio.

GEORGE PETERS, state highway director of Medina County, Ohio, has resigned to join the J. C. Baltis Con-

tracting Co. of Norwalk, Ohio. Peters has been with the state highway department since 1929.

JOHN S. DENNIS has resigned the post he has held since 1931 as resident engineer for the state highway department at Zanesville, Ohio.

JOE M. MORRISSEY, acting division engineer for District 6 of the Ohio highway department with headquarters at Delaware, has joined the WPA staff at Greensville.

M. O. ENTERLINE, for the past three years superintendent of streets at Lima, Ohio, has been appointed resident highway engineer for the state highway department in Allen and Hardin counties.

FRED L. KUEBLER has been named resident engineer of Lucas and Wood counties, Ohio, for the state highway department, with headquarters in Toledo.

CARL W. INGLE will have headquarters at Napoleon, Ohio, in his new post as resident engineer in Henry, Williams, and Fulton counties for the state highway department.

L. J. WRIGHT has been appointed county engineer of Skagit County, Wash. Wright was county engineer in 1933 and 1934 and he has been with the county office since 1921.

A. B. FREEMAN of the U. S. Public Health Service, has been assigned to the Kentucky bureau of sanitary engineering to study stream pollution in the Ohio River basin.

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Colorado River Body Announces Policy

(*Continued from p.* 1)

nearing completion. The directors of the authority announced in their resolution that they were endeavoring to secure the additional funds needed to build the high dam—a matter of about $16,000,000. The additional height will create new storage capacity of 804,000 acre-ft. plus an additional superflood storage in excess of 300,000 acre-ft.

"The authority here and now declares," the directors said, "that, if and when the high Marshall Ford Dam is completed. . . . it will dedicate and does hereby dedicate 804,000 acre-ft. of such storage in addition to the super-storage exclusively for flood storage.

"The authority reiterates its policy of operating all its facilities in such a manner as to provide, in addition to the 804,000 acre-ft., the maximum of flood control possible consistent with its financial obligations. . . . Present facilities without the high dam at Marshall Ford, operated as it is proposed to operate them, will control at least eight out of ten floods of the intensity of any of the floods of record. . . . With the high dam at Marshall Ford, its operations will result in controlling all floods of record. . . ."

In consideration of this declaration the sponsors of the pending legislation governing the operations of the authority's dams consented to its withdrawal.

The resolution adopted by the directors also pointed out that about 50 rain gages have now been installed in the upper watershed of the Colorado in addition to the 35 gages previously maintained by the U. S. Weather Bureau, and that arrangements have been made for daily readings to be transmitted to the authority. In addition, arrangements have been made to install 12 river gages, of which six will be equipped automatically to broadcast the stages of the river by short wave radio.

The design of the Marshall Ford Dam was described in *Engineering News-Record*, Dec. 1, 1938, page 697.

CONTRACTS AND CAPITAL

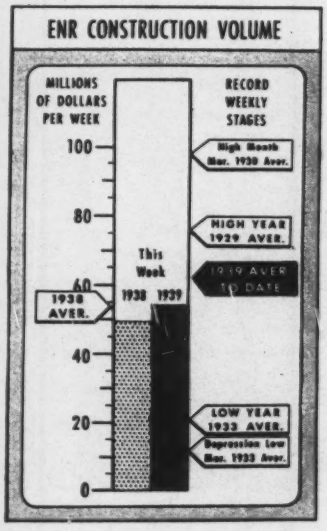
ENGINEERING construction awards for the week, $57,893,000, are 25 per cent higher than a week ago, and 18 per cent higher than the corresponding 1938 week.

Private construction tops last week by 36 per cent and last year by 20 per cent due to the high industrial building volume. Public awards are 18 per cent above the preceding week, and 16 per cent above the 1938 week.

The current week's volume brings the 1939 cumulative total to $742,058,000, 20 per cent higher than the $617,576,000 reported for the 12-week period last year.

Industrial building volume, $14,277,000 for the week, is the highest reported since June 24, 1937. Three large projects, one each in Connecticut, Delaware and West Virginia, account for $13,000,000 of the total, and are responsible for the high volume. In addition to industrial buildings, waterworks, sewerage, public buildings, and earthwork and drainage are above last week, and waterworks, sewerage, public buildings, and unclassified construction report gains over the 1938 week.

New capital for construction purposes for the week totals $17,265,000, a 52 per cent increase over the volume for the corresponding 1938 week. This week's volume is made up of $9,755,000 in corporate financing, $7,497,000 in state and municipal bonds, and $13,000 in RFC loans to municipalities.



CONTRACTS

(Thousands of dollars)

	Week Ending Mar. 24 1938	Mar. 16 1939	Mar. 23 1939
Federal	$4,117	$2,000	$3,865
State & Municipal	25,318	26,942	30,262
Total public	$29,435	$28,942	$34,127
Total private	19,714	17,507	23,766
TOTALS	$49,149	$46,449	$57,893
Cumulative 1939 (12 weeks)			$742,058
1938 (12 weeks)			$617,576

Note: Minimum size projects included are: Waterworks and waterways projects, $15,000; other public works, $25,000; industrial buildings, $40,000; other buildings, $150,000.

NEW PRODUCTIVE CAPITAL

	Cumulative 1938 12 Wk.	1939 12 Wk.
NON-FEDERAL	$348,957	$222,574
Corporate securities	93,164	41,892
State & Mun. bonds	195,870	139,519
R.E.A. loans	.....	15,631
R.F.C. loans	62,420	58
P.W.A. allotments	—2,497	....
U.S.H.A. loans	.....	25,474
FEDERAL	.....	273,500
TOTAL CAPITAL	$348,957	$496,074

FHA MORTGAGES

	Week Ending Mar. 19 1938	Mar. 11 1939	Mar. 18 1939
Selected for appraisal	$21,293	$25,560	$25,500*
Cumulative 1939 (11 weeks)			$228,851*
1938 (12 weeks)			$133,087

* Subject to revision.

ENR INDEX NUMBERS

Index Base		1913	1926
Construction Cost	Mar.	234.43	112.69
Building Cost	Mar.	196.46	106.20
Volume	Feb.	187	82